

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-28 (canceled)

29. (currently amended) A method of forming a carbon deposit inhibiting thermal barrier coating on a gas turbine engine surface that will be exposed to the flow of burning engine gas and fuel droplets, the method comprising:

5 a) depositing a layer of thermal barrier material onto the engine surface that will be exposed; and

b) depositing a layer of carbon deposit inhibiting material onto the outer surface of the layer of thermal barrier material, wherein:

10 the layer of carbon deposit inhibiting material is a layer of yttria or a layer of lanthanum oxide, and

the layer of carbon deposit inhibiting material is not reduced by carbon at temperatures below 2000° C.

30. (currently amended) The method of Claim 29, wherein the thermal barrier material comprises a ceramic is predominantly stabilized zirconia.

31. (currently amended) The method of Claim 29, wherein the layer of thermal barrier material is deposited to a thickness in the range of 5 five to one hundred 100 mils.

32-33. (canceled)

34. (currently amended) The method of Claim 29, wherein the layer of carbon deposit inhibiting material comprises yttria, and the layer of carbon deposit inhibiting material is deposited to a thickness in the range of one 1 to fifty 50 mils.

35. (currently amended) The method of Claim 29, wherein the layer of carbon deposit inhibiting material is deposited to a thickness in the range of one 1 to five 5 mils.

36. (previously presented) The method of Claim 29, wherein both the layer of thermal barrier material and the layer of carbon deposit inhibiting material are deposited by plasma spraying.

37. (previously presented) The method of Claim 36, wherein step b) is performed immediately following step a), and wherein step a) and step b) are performed by the same equipment.

38. (canceled)

39. (previously presented) The method of Claim 29, wherein the layer of thermal barrier material and the layer of carbon deposit inhibiting material are deposited by a process selected from the group consisting of plasma spraying, electron beam physical vapor deposition, chemical vapor deposition, and slurry dipping.

40. (currently amended) The method of Claim 29, wherein the carbon deposit inhibiting thermal barrier coating consists essentially of:

~~the layer of thermal barrier material a layer of stabilized zirconia disposed on the gas turbine engine surface; and~~

5 ~~the layer of carbon deposit inhibiting material a refractory oxide layer disposed directly on the layer of stabilized zirconia, wherein the refractory oxide layer comprises yttria or lanthanum oxide, wherein the layer of thermal barrier material comprises yttria stabilized zirconia.~~

41. (currently amended) The method of Claim 29, wherein the layer of ~~thermal barrier~~ carbon deposit inhibiting material comprises yttria-stabilized zirconia.

42. (currently amended) A method of forming a carbon deposit inhibiting thermal barrier coating on a gas turbine engine surface, comprising:

a) depositing a layer of thermal barrier material on the gas turbine engine surface; and

5 b) depositing a layer of carbon deposit inhibiting material directly on the layer of thermal barrier material,

wherein the layer of thermal barrier material comprises a ceramic having a thickness in the range of 5 ~~five~~ to ~~one hundred~~ 100 mils,

10 wherein the layer of carbon deposit inhibiting material ~~comprises~~ is a layer of yttria or a layer of lanthanum oxide, and

wherein the layer of carbon deposit inhibiting material has a thickness in the range of ~~one~~ 1 to ~~fifty~~ 50 mils.

43. (previously presented) The method of Claim 42, wherein the gas turbine engine surface comprises a silicon carbide composite or a silicon nitride material.

44. (previously presented) The method of Claim 42, wherein the gas turbine engine surface comprises a nickel based superalloy or a cobalt based superalloy.

45. (previously presented) The method of Claim 42, wherein the gas turbine engine surface comprises an internal wall of a combustor.

46. (previously presented) The method of Claim 42, wherein the layer of carbon deposit inhibiting material inhibits the adherence of carbon nodules to the gas turbine engine surface.

47. (currently amended) The method of Claim 42, wherein the layer of carbon deposit inhibiting material comprises yttria and has a thickness in the range of one_1 to five_5 mils.

48. (currently amended) The method of Claim 42, wherein the layer of carbon deposit inhibiting thermal barrier material comprises stabilized zirconia is not reduced by carbon at temperatures below 2000° C.

49. (previously presented) The method of Claim 42, wherein the layer of thermal barrier material comprises an oxidation resistant bond coat.

50. (currently amended) A method of forming a carbon deposit inhibiting thermal barrier coating on a gas turbine engine surface, consisting of comprising:

- a) depositing a layer of thermal barrier material on the engine surface; and
- b) depositing a layer of carbon deposit inhibiting material on the layer of thermal barrier material, wherein:

the carbon deposit inhibiting material is a refractory oxide that is not reduced by carbon at temperatures below 2000° C, and

10 the layer of carbon deposit inhibiting material has a thickness of about 50 mils.

51. (currently amended) The method of Claim 50, wherein:

said step a) comprises depositing the a layer of stabilized zirconia to a thickness in the range of 5 five to one hundred 100 mils, and wherein the refractory oxide is selected from the group consisting of alumina, yttria, and

5 lanthanum oxide

step b) comprises depositing the layer of carbon deposit inhibiting material to a thickness in the range of one to fifty mils.

52. (canceled)

53. (currently amended) The method of Claim 50, wherein step a) comprises plasma spraying the layer of thermal barrier material on the engine surface, and step b) comprises plasma spraying the layer of carbon deposit inhibiting material comprises yttria on the layer of thermal barrier material.

54. (canceled)

55. (New) The method of Claim 29, wherein the layer of carbon deposit inhibiting material prevents carbide bonding of carbon to the engine surface that will be exposed.

56. (New) The method of Claim 29, wherein the gas turbine engine surface comprises a swirler or a fuel nozzle tip.

57. (New) A method of forming a carbon deposit inhibiting thermal barrier coating on a gas turbine engine surface, consisting essentially of:

a) depositing a layer of thermal barrier material on the gas turbine engine surface; and

5 b) depositing a layer of carbon deposit inhibiting material directly on the outer surface of the layer of thermal barrier material, wherein the layer of carbon deposit inhibiting material is a layer of yttria or a layer of lanthanum oxide.

58. (New) The method of Claim 57, wherein:

said step a) comprises plasma spraying the layer of thermal barrier material on the engine surface, and

5 said step b) comprises plasma spraying the layer of carbon deposit inhibiting material on the layer of thermal barrier material.

59. (New) A method of forming a carbon deposit inhibiting thermal barrier coating on a gas turbine engine surface, consisting essentially of:

a) depositing a layer of thermal barrier material on the gas turbine engine surface; and

5 b) depositing a layer of carbon deposit inhibiting material directly on the outer surface of the layer of thermal barrier material, wherein:

the layer of carbon deposit inhibiting material is a layer of alumina, and

10 the layer of carbon deposit inhibiting material is deposited by plasma spraying.

60. (New) The method of Claim 59, wherein said step a) comprises depositing the layer of thermal barrier material directly on the gas turbine engine surface.

61. (New) The method of Claim 60, wherein the layer of thermal barrier material consists essentially of stabilized zirconia.

62. (New) The method of Claim 59, wherein the gas turbine engine surface comprises an internal engine element comprising a nickel based superalloy or a cobalt based superalloy.

63. (New) The method of Claim 59, wherein the gas turbine engine surface comprises an internal engine element comprising a silicon carbide composite or a silicon nitride material.